

26. *Pieris Josephina*.

Pieris Josephina, Godart, Enc. Méth. ix. p. 158 (1819); Hübner, Samml. exot. Schmett. ii. pl. cxxvi. (1819-36).

Male and female, St. Domingo, and male, Mexico. B. M.

Mr. Heron and I have compared our specimens with Godart's types, now in the Edinburgh Museum.

IV.—*Some new Coccidæ*. By T. D. A. COCKERELL, Entomologist of the New Mexico Agricultural Experiment Station.

Pulvinaria ephedrae, sp. n.

Mature female about 5 millim. long, with a snow-white ovisac 11 millim. long and 4 broad.

Body of female quite soft, not at all chitinous, raspberry-pink in front, greenish on dorsum, with some minute black specks. The front part of the female is covered by a thick square patch, 2 millim. broad, of white secretion; the hind margin is also fringed with secretion, and the body has irregular patches, arranged in three longitudinal bands, of which the middle is the narrowest and most definite. Ovisac firm, not adhering to objects which may chance to touch it, ribless. Eggs greenish yellow.

♀.—When boiled in caustic potash turns the liquid pink. Mounted on a slide, 6 millim. long and $4\frac{1}{2}$ broad; legs and antennæ brown. Antennæ 8-segmented, 1 at least twice as broad as long; formula 3 4 2 5 1 6 8 7. The several segments of an antenna were found to measure as follows in $\mu\mu$:—(1) 62, (2) 70, (3) 112, (4) 81, (5) 67, (6) 56, (7) 36, (8) 47. Legs ordinary, tarsus about half length of tibia; claw-digitules rather stout, extending beyond tip of claw; tarsal digitules slender. Margin with very numerous sharp spines, placed closer together than the length of one. Anal plates yellowish brown.

Hab. On *Ephedra*, Mesilla Park, New Mexico, a short distance east of the Agricultural College, in the *Larrea* zone, May 1898.

A very beautiful and distinct species, superficially rather resembling *Icerya Rileyi*, which occurs in the same locality on *Larrea*. The characters italicized in the description are of subgeneric value, and *P. ephedrae* may be regarded as the type of a new subgenus—*Philephedra*.

Aspidiotus yuccarum, sp. n.

♀.—Scale circular to suboval, about $2\frac{3}{4}$ millim. diam., slightly convex, dark brown, rough and concentrically wrinkled, blackish towards the middle; but the central part, covering the exuviae, covered by a large round patch of white secretion; when this is rubbed off, the exuviae are exposed, shining black, subcentral. There is a thick ventral scale. Young female scales appear entirely white, or, when rubbed, white with a black spot.

♂.—Scale elongate, brown, with the exuvia at one end covered by white secretion.

♀.—Caudal region brownish; three pairs of lobes, these short, yellowish brown, notched at the end, with glandular processes at their bases much as in *Diaspidiotus*; the middle lobes especially remind one of human premolar teeth, fangs and all. Middle lobes a short distance apart, second separated by a similar distance from the first, third separated from the second by an interval about as great as the width of the former; margin beyond the third minutely crenulate, with a protuberance representing a rudimentary fourth lobe somewhat further from the third than the third is from the first. Spines very minute. No spine-like or other plates. No grouped ventral glands, but many small round or slightly elongate dorsal glands. Anal orifice a long distance from the hind end. Antennæ represented by a small tubercle bearing a single bristle.

Hab. At bases of leaves of *Yucca elata*, associated with *Dactylopius dasylirii*, Ckll. (for which the *Yucca* is a new food-plant), Mesilla Park, a short distance east of the Agricultural College, at the beginning of the *Larrea* zone, May 1898.

This very distinct species belongs to an unnamed section of the genus, allied to *Diaspidiotus*, containing *A. yuccarum*, Ckll., *A. yuccæ*, Ckll., and *A. bigeloviæ*, Ckll. These species agree in having black exuviae, no plates (gland-hairs), and no grouped ventral glands. *A. yuccæ* was described from Mexico; but on May 19, 1898, Prof. C. H. T. Townsend found it at the bases of leaves of *Yucca elata* in the Mesilla Valley, New Mexico. This new find shows that the small size of the insect is in no way due to immaturity, for specimens of the size of the original types are full of eggs. The living female of *yuccæ* is dull lilac, and it turns bright lemon-yellow in liquor potassæ. What I called the spine-like plates in the original description are the true spines; they are much larger than those of *yuccarum*. The Mesilla-Valley form of

yuccæ is constantly different from the type by the considerably more produced median lobes; at some future time Prof. Townsend will probably give it a varietal name.

Aspidiotus (Chrysomphalus) lilacinus, sp. n.

♀.—Scale light grey, the colour of the bark on which it rests, about 1 millim. diam.; immature scales show a white dot and ring; old scales when rubbed show jet-black exuviae.

♀.—When living dull lilac, becomes bright green in caustic potash, and the eyes of the embryonic larvæ a rich dark blue. No grouped ventral glands. Four pairs of lobes.

Hab. On bark of oak (a species of the *Quercus undulata* group), Dripping Spring, Organ Mts., New Mexico, April 23, 1898. It is parasitized by a species of *Signiphora*.

A. lilacinus resembles *A. obscurus*, but the scales are smaller, the glandular processes at the bases of the lobes are longer, there are no circumgenital glands, and the fourth lobe is broad and serrulate. The anal orifice is a considerable distance from the hind end, as in *obscurus*, not close to it, as in *tenebricosus*, nor is the scale convex like that of *tenebricosus*. *A. lilacinus* has four pairs of lobes and long slender glandular processes, quite after the manner of the Mexican *A. calurus*; but the shape of the female is ordinary, not as in *calurus*, the median lobes are entire instead of notched, and the second lobes are only once feebly notched. The third lobes are minutely serrate, with four notches, and the fourth are serrate in the same manner. There are three little prominences beyond the fourth lobe as in *calurus*.

Melanaspis must be regarded as a section of the subgenus *Chrysomphalus*, and extended to include *A. tenebricosus*, Comst., *A. calurus*, Ckll., and *A. lilacinus*, Ckll. It is to be remarked that *tenebricosus* &c. in their longer glandular processes and absence of circumgenital glands resemble the penultimate stage of typical *Melanaspis*.

I have a new locality to record for *A. calurus*, namely Oaxaca, Mexico, where it was found by Mr. A. Koebele on a milky plant, Aug. 22, 1897.

I wish to draw attention to a curious pigment found in various Coccidæ, mentioned above in the description of *A. lilacinus*. It is of a dull lilac-colour, but when placed in liquor potassæ immediately becomes light green. My *Parlatoria theæ*, var. *viridis*, was named from this green colour; but Mr. Alex. Craw lately sent me fresh specimens on stems of "*Ilex pedunculata*" (doubtless an error for *I. pedunculosa*, Miq.) from Japan, and I found that the female was of a curious purple colour, except the mouth-parts and lobes (of

fringe), which were yellowish brown. Directly these insects were placed in liquor potassæ they turned green.

Aspidiotus transparens, Green, subsp. *simillimus*, nov.

♀.—Scale white, a little transparent, diam. $1\frac{2}{3}$ millim., flat, circular to suboval; exuviae central, very light yellow, sometimes more or less covered with white secretion.

♂.—Scale oval, ordinary; exuviae whiter than in the female.

♀.—After boiling yellow; transparent and colourless if the contents are lost; median lobes remaining yellowish, but hardly darker than the others. Three pairs of well-developed lobes, of the *nerii* type; median feebly notched on inner and distinctly on outer side; second narrower and practically entire; third smaller and notched on outer side. The median lobes always extend a little beyond the plane of the tips of the second, this plane being about on a level with the outer notch on median lobes. Squames as in the *nerii* group, extending beyond the tips of the lobes, those beyond the third lobe about twice its length. Six or seven long pointed squames, ramose on outer side, beyond the third lobe; a short distance cephalad of the furthest squame is a spine. Anal orifice a little nearer the caudolateral groups of glands than to the hind end. Transverse pores numerous, belonging to glands of the cylindrical type, as in *nerii* &c.; there are over 25 well-formed transverse pores on each side of the median line. Caudal region striated. Four groups of circumgenital glands, caudolaterals 7 to 9, cephalolaterals 8 to 15.

Hab. On a palm from Sydney, Australia, found by Mr. Alex. Craw, Dec. 1897, in the course of his horticultural quarantine work at San Francisco.

The scale of this insect resembles that of *A. destructor* and *transparens*. The female differs at once from *destructor* by the longer median lobes; from *transparens* it differs by the more numerous glands in the circumgenital groups, and especially in the much longer squames beyond the third lobe. Compared with some *A. transparens* on *Dalbergia* from Ceylon, sent by Mr. Green, the scales of *simillimus* are more opaque and less wrinkled. The scale of *simillimus* at once differs from *nerii*, which has smaller pale orange exuviae; it resembles more closely the *hederæ* form of *nerii* than the scales found on oleander. The scale and exuviae of *simillimus* are too small for *fimbriatus*, of which I have authentic material from Mr. Maskell.

Mesilla Park, New Mexico, U.S.A.,
May 19, 1898.